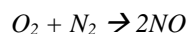


Name _____ Period _____

Skill 30.01 Problem 1

Classify the following stoichiometry problem as one of the following types: mole-mole, mole-mass, mass-mole, mass-mass

Atmospheric oxygen reacts with nitrogen in automobile engines to produce NO, a poisonous greenhouse gas

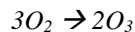


If 5 moles of nitrogen react, how much oxygen gas in moles is consumed?

Skill 30.01 Problem 2

Classify the following stoichiometry problem as one of the following types: mole-mole, mole-mass, mass-mole, mass-mass

In the lower atmosphere where we live, NO and UV light catalyze the production, O₃ from O₂ as shown,

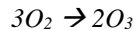


If 5 moles of oxygen react, how much in grams of ozone is produced?

Skill 30.02 Problem 1

Identify the steps required to solve the problem below:

In the lower atmosphere where we live, NO and UV light catalyze the production, O₃ from O₂ as shown,



If 500.0 g of oxygen react, how much in grams of ozone is produced?

Name _____ Period _____

Skill 30.03 Problem 1

For each of the problems below:			
(a) Balance the reaction (b) Classify the problem as: mole-mole, mass-mole, mole-mass, or mass-mass (c) Identify the mole ratio between the unknown and the given substances			
Item	Problem	Classification	Mole ratio
1	What mass in grams of 1-chloropropane ($\text{C}_3\text{H}_7\text{Cl}$) is produced if 400. g of propane react with excess chlorine gas according to the equation $\text{C}_3\text{H}_8 + \text{Cl}_2 \rightarrow \text{C}_3\text{H}_7\text{Cl} + \text{HCl}$		
2	How many grams of chlorine gas are required to react completely with 10.00 grams of sodium? $\text{Cl}_2 + \text{Na} \rightarrow \text{NaCl}$		
3	The Haber process for process for producing ammonia commercially is represented by the equation below. To completely convert 9.0 mol hydrogen gas to ammonia gas, how many moles of nitrogen gas are required? $\text{N}_2 + \text{H}_2 \rightarrow \text{NH}_3$		
4	How much sodium acetate, in grams, can be produced from 2.5 grams of sodium bicarbonate and excess acetic acid ($\text{HC}_2\text{H}_3\text{O}_2$)? $\text{HC}_2\text{H}_3\text{O}_2 + \text{NaHCO}_3 \rightarrow \text{NaC}_2\text{H}_3\text{O}_2 + \text{CO}_2 + \text{H}_2\text{O}$		
5	How much oxygen, in moles, can be produced from 3.0 grams of potassium chlorate? $\text{KClO}_3 \rightarrow \text{KCl} + \text{O}_2$		